

# Developing a business model for sustainable renovation of public housing

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## Abstract

Renovating housing properties in a sustainable manner while at the same time attaining a financially profitable project is a challenge for housing companies today. This problem becomes more apparent in socially deprived residential areas. Although there has been a vast amount of research on the topics of business models and sustainable housing renovation respectively, there seems to be a lack of research connecting these two together. The aim and objective of this paper is to propose a business model regarding sustainable housing renovation for public housing companies. A literature study together with an interview study with a public housing company in Sweden form the basis for a proposed business model. The model was derived through an iterative process of coding, singling out themes relevant to the notion of business models and business-like approach. The model was thereafter applied and tested on a real-life renovation case. The case consists of a public property containing 1200 apartments, afflicted with severe technical complications as well as socio-economic challenges regarding the tenants and the area as a whole. Findings show that merging sustainability dimensions with traditional business prerequisites, such as profit, is perceived as difficult. Achieving a profitable project while at the same time undertaking a social responsibility towards the current tenants is a balance act. There are however financial profits to be found in the social dimension and the notion of CSR projects was positive, both from a social and economic perspective. Identifying and evidencing these financial values is an essential part of the proposed business model. It is suggested that a well-configured business model could serve as a platform for renovation projects, demonstrating how sustainability can be brought together with both customer and technical renovation demands of a property.

**Keywords:** Business models, sustainable renovation, public housing companies, case study.

# 1. Introduction

Deteriorating and aging housing properties and the management of these is today an important issue in society. In Sweden, a significant proportion of these estates were built during the Million Homes programme in the 1960-1970s and is today in great need of renovation (Olsson et al., 2015). Housing companies face major challenges in renovating these aging buildings (Stenberg, 2015; Thuvander et al., 2012). Renovating these properties in a sustainable manner would mean incorporating economic, social and ecological needs of different stakeholders. Two questions property owners might raise are: 1) Are there business incentives for renovating these properties in a sustainable way? and 2) Are there any available business models related to the problem? According to Williamsson (2014) the definition of the concept *business model* is ambiguous. Generally, it concerns a system describing how a company should operate in order to stay profitable. The Cambridge Learner's Dictionary (2016), for example, offers the following definition of the concept business model: "*A description of the different parts of a business or organization showing how they will work together successfully to make money.*"

So far it does seem as there is a knowledge gap in research literature between business models and sustainable housing renovation. However, the connection between renovation and a business model approach has been brought up in Swedish trade press, e.g. Fastighetsnytt (Thor, 2016). Thus, the concept seems to be debated within the industry even if not well-researched. The aim and objective of this paper is to propose a business model regarding sustainable housing renovation for public housing companies.

## 2. Research methodology and case object

Study object is the Swedish public housing company Familjebostäder. The analytical unit is the property owner, meaning that the research takes the property owner's viewpoint in large housing renovation projects. The study specifically focus on Familjebostäder's upcoming renovation project at Siriusgatan in Western Bergsjön, Gothenburg. The buildings at Siriusgatan were built during the 1960s Million Homes programme and consist of 1200 apartments. These are reaching their technical life span and are fragile not only from a technical perspective but also from a socio-economic perspective. The methodological steps were as follows:

1. An extensive literature review was performed in order to establish a theoretical framework related to business models.
2. An interview study was then conducted with 10 individuals from different organisational positions in Familjebostäder. In order to acquire a deeper understanding of the topic both related to the organisation and related to the Sirius project a variety of relevant individuals from the company was interviewed. Both individuals from the Sirius project and individuals with other central roles for renovation decisions in the company. In the results the interviewees are grouped into senior managers (4), project managers (3) and support staff (3).
3. The interview data was structured and analysed in relation to the theoretical framework.

4. Lastly, derived through an iterative process of coding and singling out themes relevant to the notion of business models and business-like approach, the findings from the analysis were developed into a proposed business model for sustainable renovation.

The theoretical framework provided an understanding of the concept of business models, sustainable renovation and how they could be interconnected. The interview study in turn offered an opportunity to obtain in-depth knowledge of how the concept of business models is perceived in the light of Familjebostäder's business and in particular their renovation project at Siriusgatan in Western Bergsjön.

### 3. Theoretical framework

A business model is supposed to explain how a company stays profitable, i.e. how financial value is created (De Wit and Meyer, 2014). For housing renovation projects, financial value is generally created through increased rent incomes, decreased operating expenses and increased real estate values and the project is ultimately economically sound if it yields a proper return on the invested capital (Lind et al., 2014). Shafer et al. (2005) argues that business models are usually made up of a system composing four main categories: strategic choices, creating value, capturing value and value network. Based on these categories Shafer et al. (2005) sought to develop a definition regarding business models: *"A representation of a firm's underlying core logic and strategic choices for creating and capturing value within a value network"* (Shafer et al., 2005). This notion of business models is supported by Williamsson (2014) and Teece (2010), who state that the model should mediate the company's business logic and explain how profits are made, i.e. how value is created. Figure 1 illustrates the various elements in developing a business model as proposed by Teece (2010).

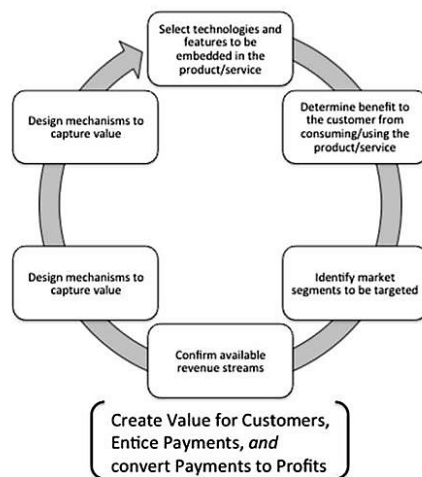


Figure 1: Elements in the development of a business model (Teece, 2010).

From a business perspective, the economic dimension of sustainability revolves around how the company operates in order to stay profitable but at the same time acting sociably just in relation to society and its citizens (Grankvist, 2012). In turn, acting sociably just in a business setting is often named Corporate Social Responsibility (CSR) and typically concerns a widespread collection of issues in which companies are encouraged to act in a socially responsible manner

(Dahlsrud, 2008). In terms of CSR and housing management, Blomé (2012) found that strict economic value such as lower operating expenses and new commercial prospects can be derived from CSR projects.

As properties age, they are subjected to the ravages of time and deteriorate. Renovation is the procedure of returning a building to its original state, or even improving it past its original conception (Ástmarsson et al., 2013). At heart, the purpose of renovation projects is to lengthen the beneficial use of a standing building and as such constitutes a cost-effective alternative to new construction (Mansfield, 2009). As early as 2008 the real estate industry called for major renovation needs of Swedish properties. For the Million Homes programme properties, as high as 40% of the entire programme stock were classified as in need of extensive renovation (see e.g. Stenberg, 2015). The need and magnitude of renovation is contextual since it depends on the original state of the building, what level of maintenance has been done earlier, and what demands the occupants have (Ástmarsson et al., 2013). The property owner is generally compensated for the renovation investment in form of increased real estate value and potential increase of rental income (Ástmarsson et al., 2013). Figure 2 details how the lifetime and value of a property is affected by a renovation.

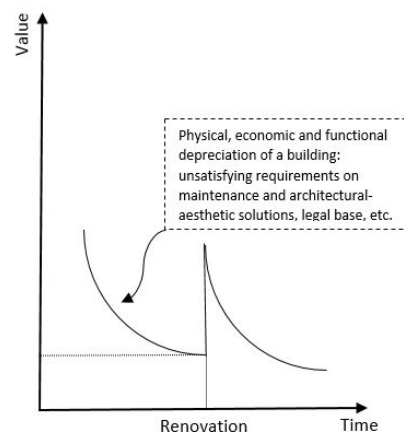


Figure 2 - The relation between value, time and renovation (Kaklauskas, et al., 2007)

However, the increase in rental income can be socially problematic, leading to something which Lind et al. (2014) labels as “*renoviction*”, meaning that the tenants are forced to move due to being incapable of paying their post-renovation rent. Stenberg (2015) continues and argues that today’s problem of dramatically increased rents as a result of renovations, causes both social as well as political implications. Boverket (2014) confirms the argument by Lind et al. (2014) regarding “*renoviction*” and concludes in their study that major renovation projects often result in that less financially endowed households are forced to move out of their renovated apartment. Adding to the topic, Thuvander et al. (2012) states that as sustainable renovation processes are multifaceted in nature, a synthesized and systemic approach is needed in order to make the right decisions regarding renovation investments. Moreover, the authors’ call for a wider spectrum of values, such as cultural, social and architectural, to be adhered to when developing policies and business plans for renovation projects. The business and economic aspects of renovation projects are in the end deemed as major obstacles in achieving sustainable renovation (Stenberg, 2015; Ástmarsson et al., 2013).

## 4. Value creating measures in renovation

Each renovation project is expected to be profitable and as such able to carry its own costs and not become a financial burden to the company as a whole. However, set in relation to being a public housing company, with owner directives to serve the municipality's citizens with affordable housing, several interviewees vented concerns regarding adopting a business-like approach. There is, as one senior manager expresses, a balance act between being business-like and taking social responsibility:

*"...and this is where the difficulty is, to achieve a profit while at the same time undertake a social responsibility. This is our owner directive, we are supposed to be profitable, business-like and we are to undertake a social responsibility, so it is a balance act."*

This notion of connecting social responsibility with traditional business values is a shared view by several interviewees in together with having a long-term philosophy regarding corporate investments. The view is visible in their way of engaging in financially challenging renovation projects. In terms of value creation in renovation projects, five main components have been identified in the study; *increase of rent, long-term approach, sustainability focus and CSR projects, customer dialogue, and area attractiveness.*

### 4.1 Increase rent after renovation

Due to Familjebostäder's role as public housing provider and their management philosophy of acting "business-like" there are contradictions related to an increase of rent. On one hand an increase of rent is vital in terms of profitability and a strong economic driver for Familjebostäder in renovation projects. On the other, and according to some interviewees, rental increase due to renovation is difficult to manage, especially in low income areas such as Western Bergsjön. A Project Manager touches upon the subject, saying:

*"It is the social aspect, plain and simple. If we are to be fully business-like, i.e. completely profitable then the rents could run too high and that does not really play well into our commitment as a public housing company."*

An increase of rent is thus often viewed as problematic, and as a consequence the level of technical and environmental measures that can be taken are down-sized. Sometimes gradual increases of rent, split over several years, are applied in socially deprived estates. A Senior Manager describes this as a way of lessening the increased economic burden for post-renovation tenants.

Unlike some private real estate companies, Familjebostäder's main objective in renovation projects is not to maximize the rental yield, even though this might increase the financial outcome of Familjebostäder as a property owner, since this could negatively affect the tenants' situation. This view echoes among the employees and one Project Manager emphasize the importance of properly considering the needs of both the customer and the property itself and to

do this in an early stage before rushing into a renovation project. The same Project Manager further state that it often becomes an act of scaling the project size in order to find the right balance between the increase of rent and what is reasonable from a residential perspective. A Senior Manager says the following concerning Familjebostäder's objective:

*"The property generates a value. It is our investment, we must assure that that value is sustained. In a best-case scenario it increases, but we must [at least] assure that it is sustained. That is the number one priority I would say."*

Implementing a separate funding system in regards to renovation projects is brought forward as a possible solution by a Support Staff officer, who also states that if there is no capital fund reserved for the renovation of the property, the project must be financed by an increased rent.

## **4.2 Adopting a long-term perspective in renovation to visualize value creation over time**

Several interviewees agree that there are profits to be found in adopting the environmental dimension in renovation projects. A Senior Manager elaborates by saying that even if the initial investment cost might be lower if overlooking environmental concerns beyond legislation, it often become profitable when viewed from a long-term perspective. Similar views were expressed by other interviewees stating that renovation projects may struggle with profitability the years following project closure, but when considering the properties extended lifetime due to the renovation, the project is profitable. In contrast to the common practice of foremost concentrating on the initial investment cost a Senior Manager mentions the importance of having a life cycle cost perspective. This notion of seeing profitability and investments from a long-term perspective was expressed by many interviewees but also problems related to having an extended time frame was raised in that that current decision models lack support for such arguments. A Senior Manager argues for the difficulty of making the right investment decision when considering an extended time-frame and states:

*"With the required rate of return and the financial control we have. Sometimes this can cause the decisions we make to seem as not so smart when viewed in a 100-year perspective."*

This idea of a long-term perspective is evident in Familjebostäder's idea of developing the attractiveness of Western Bergsjön, says a Senior Manager, and an increased attractiveness of the area will lead to financial value generation in terms of increased real estate values. Thus, extended time-perspective in projects are viewed positively and several interviewees argue that when considered in a long-term perspective, projects with additional emphasis on social and environmental sustainability are financially sound.

## **4.3 Sustainability and CSR driven values**

All interviewees brought up sustainability as value creator. One Senior Manager points to that all three dimensions are necessary in renovation projects in order to attain a long lasting and

technically sound property. However, the dimensions are by most interviewees perceived as somewhat conflicting and one Support Staff officer stated that it comes down to finding the right balance between them. For example, extensive energy efficiency measures contribute to reduced operation costs but also involves high initial investment costs. Even if all three dimensions of sustainability is considered most interviewees believe that the economic dimension is particularly fundamental for Familjebostäder. A Project Manager raised a concern that if additional value is foremost derived from social or environmental measures, the economic side might be overlooked and a Senior manager expressed it as:

*“...the economic [dimension] is somewhat the entire basis of it, without it will not be possible [to renovate]. Only because it is socio-economically good, because if Familjebostäder makes a lot of bad investment decisions we would go bankrupt. ...we have to make sound investments, which is an initial condition.”*

Following this argumentation, another Senior Manager states that social projects and social measures as isolated objectives are not Familjebostäder's main focus, and also says that in the end they are a real estate company and need to operate their business accordingly. A Support Staff officer state however that having a solid financial position gives room for other sustainability perspectives to be explored and invested in. Similarly, one Project Manager argues that if the financial calculation for a project does not add up, other sustainability dimensions are less likely to be accounted for. More, a Senior Manager states that in the long run investments in the environmental sustainability can generate profits, but these investments are often representing an expense during the actual project phase. Several interviewees discussed the difficulty of merging economic and social perspectives in a renovation project. Achieving, the owner's required profitability of a project while at the same time incorporating social dimensions is perceived as difficult. This, they say, often results in that one dimension dominate on expense of the others, and often on the environmental dimension of sustainability.

CSR efforts were mentioned by several interviewees and then in a positive way. One senior Manager argued that CSR related projects are economically profitable for Familjebostäder, combining social and economic sustainability. An example of a CSR measure brought up during interviews were related to youths, in which troublesome youths and young adults are engaged in meaningful projects as a way of reducing vandalism on both real and personal property. A Senior Manager also states that an active social presence and management by property owners could result in reduced repair and maintenance costs due to reduced vandalism. Several interviewees agreed on that CSR efforts, both in renovation projects and property management practice are profitable from an economic as well as a social viewpoint.

#### **4.4 Dialogues with tenants as a mean to generate value**

The relationship between the company and the tenants is an important issue brought up by numerous interviewees. One Senior Manager for example says:

*“I do not think you should build a relationship [with tenants] because you have to or want to have good scores [customer polls]. You should build a relationship and bring in their viewpoints because it actually improves the project.”*

The opinion of having a dialogue with the tenants and listen to them in order to understand what they wish for in their living was present in all interviewees. Several Senior Managers emphasize the importance of having a dialogue with the tenants, to “truly ask what they want”. To exemplify one Support Staff officer expresses it as: *“Maybe it is only half of the tenants who are aware of that the basement is newly-painted”*. The same Support Staff officer elaborates further and states that it is important to see the perspective from the tenants view for each measure in order to see what their gains from the renovation are. A mutual dialogue would, according to a Senior Manager also provide Familjebostäder with a deeper understanding concerning what measures a renovation should include. Thus, according to a Senior Manager a dialogue with the tenants, not only lead to higher customer satisfaction, it also contributes to improved delivery. More, a Project Manager stated that it is *“very important with information and communication [with tenants], to from the very beginning signal to the tenants what they can influence”*. This would, according to a Support Staff officer, lead to a higher rate of satisfaction among the tenants, since they would feel more involved in the renovation project. A Support Staff officer elaborates further on the topic and states that: *“...[rents need to] be on a level where the cost is reasonable for the tenants in relation to what he or she receives.”* Thus, proper dialogue increase the tenants understanding of why renovations has to be done and also how the increase of rent relates to the measures taken. Another benefit from tenant involvement, as argued by a Project Manager, is decreased vandalism since the tenants become more caring of the buildings.

#### **4.5 Increase the attractiveness of a deprived residential area**

Renovation and renewal projects have previously been found to contribute to an improved socio-economic development along with increased real estate values of residential areas. A Senior Manager explains that if a socially deprived area, like Western Bergsjön could be more closely linked, for example through shared infrastructure, with neighbouring areas with higher real estate values then the values at Western Bergsjön would gradually rise as well. Two Senior Managers state that renovation and renewal projects could be seen as growth drivers with the possibility to increase the socio-economic development of deprived areas. A Senior Manager state that the renovation of Western Bergsjön will be beneficial for Familjebostäder and argues: *“We must do this and there are also values down the road. That if we change the image of Bergsjön the real estate values will be increased.”* Another Senior Manager discusses the same topic and mean that increasing the general opinion and attractiveness of an area, the market value of the properties will follow. An example given on how this can be done is to densify the area with new constructions and as such diversify Western Bergsjön’s demographic landscape.

A Support Staff officer argued that increased attractiveness can be achieved by having a responsible and proactive property management. However, raised property value in a housing area cannot be done isolated from other property owners in the area, as explained by a Support



Staff officer: “If you want to make an effort in an area, it would have been good if the others also did it, if you want to enhance the area.” Also other interviewees stress cooperation between property owners in an area as essential in order to increase the attractiveness. Here, a mixture of tenure forms, e.g. rental apartments mixed with co-operative condominiums, is favourable, as argued by a Senior Manager:

“In larger areas we can actually sell [properties to private companies] ..., ... in order to get a mix [of tenure forms] but then it need to be a deliberate strategy and not about making money.”

## 5. A proposed business model

Based on the findings from our study the stepwise business model suggested by Teece (2010) has been modified so it is applicable for renovation of public housing properties. The modified business model (Figure 3) illustrates how a renovation project creates value for a public property owner, and in the long-run also for the tenant.

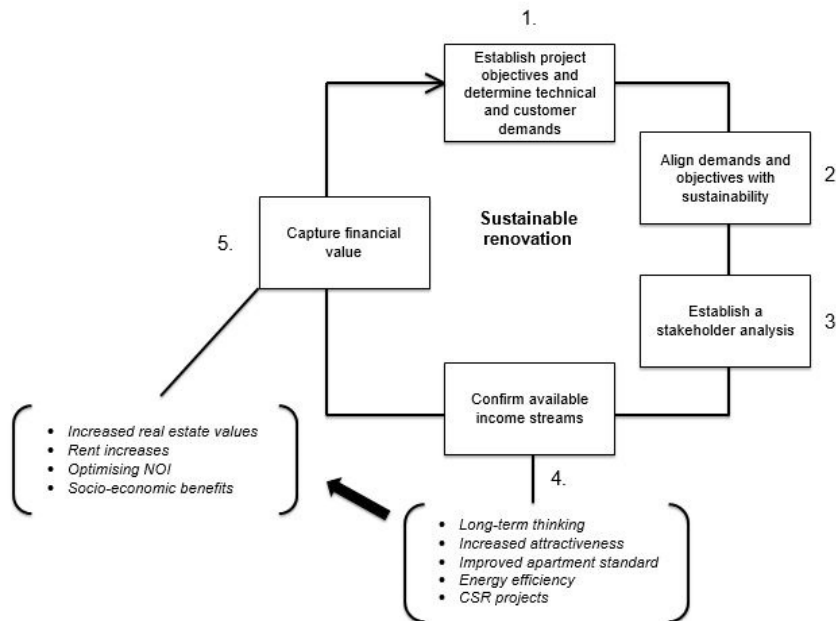


Figure 3 - A proposed business model.

The property owner is rewarded with a sustainable sound and technically improved property, which generates an optimized cash flow and value development over a prolonged timespan. The value for the tenant is an improved living that consider his or her needs and demands. The business model includes five systematic steps of actions:

1. **What is the aim of the renovation project?** A first step is to establish customer demands through dialogues with tenants. This step is crucial in being able to deliver value for the tenant. Aligning tenant demands with the technical needs of the property and the overall project objectives constitutes a foundation upon which the renovation projects rests.

2. ***Align the demands and objectives with the dimensions of sustainability.*** The sustainability dimensions should be entwined with the tenants' demands and objectives in order to deliver the most valuable property. This means identifying which sustainability actions that are most appropriate set in combination with technical measures and the tenants' viewpoints.
3. ***Perform stakeholder analysis.*** In short the stage revolves around locating key stakeholders and the management of these. Early stakeholder management would lead to a more efficient project and a stakeholder analysis could help map and identify key stakeholders, for example neighbouring property owners and tenant organisations. It would improve the renovation project's accomplishment, both organizationally and financially, if actors and interest conflicts could be detected and dealt with at an early stage.
4. ***Confirm income streams.*** In step four available income streams are established. The income stream is created through the physical renovation of the properties and is brought into the renovation project as a way of increasing the positive cash-flow after project closure. Both actions that generate value in short-term and actions with long-term benefits should be considered, for example by adopting a life cycle cost perspective.
5. ***Capturing final values.*** The last step is critical as it revolve around capturing the financial value and relates to the previous steps in order to achieve an economically sustainable renovation project. The step is largely dependent on step four as it deals with capturing the financial value created by the physical renovation measures taken. More specific, financial value can be captured by an optimized operation of the properties and a value improvement in the form of increased real estate values. However, in socially deprived areas socio-economic benefits are also important to consider. These can be captured by complementing the renovation project with aligned CSR-projects. These types of projects could have great impact on the long-term value development of a residential area.

## 6. Discussion and conclusions

This paper has examined the possibility to develop a business model applicable for sustainable renovation of public housing. The proposed model seeks to bring a long-term focus on economic, environmental and social sustainability together.

Public housing companies typically have an extended social responsibility and a history of being a society benefactor. Following that tradition, renovation projects seeks to deliver sustainable, good and affordable living while at the same time acting within a business logic. Do these viewpoints come together? The study reveal that realising a profitable renovation project while undertaking sustainability measures, such as extensive energy efficiency and social measures, is an act of balance. Nevertheless, financial value can be found through a social obligation approach, for example in CSR projects. Our findings show that there are tensions between the three dimensions of sustainability in renovation of public housing but also positive attitudes towards gluing them together. Generating (economic) value for the company out of

customer demand is stressed in research literature (Williamsson 2014, De Wit & Meyer 2014). The interviewees in our study expressed the importance of having a good dialogue and relationship with the tenants but they also voiced that this relationship should not be built just for the sake of it, it need to create value for the public housing company and for the tenants. Similar to Blomé (2012), our interviewees believed that strict economic value can be gained from a sound tenant-owner relationship, for example through CSR projects. Focusing on renovation measures that both provide increased tenant value and financial profit for the property owner was shared among our interviewees. A management philosophy of “business-like behaviour” in combination with social projects, echoes to a wide degree the ideas of Grankvist (2012) and Blomé (2012). The environmental sustainability seems more challenging and not always in line with an increase of financial value in terms of raised rent, an issue also brought forward by Lind, et al. (2014). However, the “*renoviction*” problem (Boverket 2014, Lind et al. 2014) could be accounted for by identifying different tenant demands in an early stage and thereafter aligning them with possible revenue streams. Due to the possible tensions between creating economic value for the company and tenant involvement (Ástmarsson et al. 2013, Stenberg, 2015), the proposed model especially focus on demonstrating how value can be generated and captured in a renovation project through a dialogue with tenants. Thus, by acknowledging the tenants and providing them with technical solutions relevant for them, the business model could help display how value could be provided for both the tenants as well as for the property owner.

In terms of value creation in renovation projects, a number of components have been identified. These have been incorporated into the business model and could be applied in projects like Siriusgatan in order to capture financial value from the income streams, enabling an economically successful project. These are increased real estate values through an *increase of rent* respectively *raised area attractiveness*, by adopting a *long-term perspective* on investments, by generating economic benefits due to *CSR projects*, through an *optimised net operating income* due to a *sustainability focus*, for example energy efficiency measures. Balancing these components with aspects concerning *tenant demands* is a key for the business model to capture sustainable dimensions.

In conclusion, the benefits that sustainability dimensions bring to renovation projects should be intertwined with the technical state of the property along with the tenants’ demands. It is suggested that a well-configured business model could serve as a platform for renovation projects, demonstrating how sustainability can be brought together with both customer and technical renovation demands of the property. The proposed business model could be used as a tool early on in the renovation project process and be a helpful framework when navigating in the intersection between profitability and sustainability and as such avoid negative effects such as “*renoviction*”.

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